WHAT IS CLAIMED IS:

1. A video signal coding method comprising the steps of:

determining the coding difficulty level d of an input video signal for each unit time;

determining a reference value for allocating coding bits on the basis of temporally b (d) for the amount of coding bits b allocated for each unit time and related in advance to the coding difficulty level d of said input video signal for each unit time;

determining an actual amount of allocated coding bits b_x on the basis of the reference value; and

generating coded data by coding the input video signal for each unit time on the basis of said actual amount of allocated coding bits b_x.

2. The video signal coding method according to claim 1, wherein said reference value is determined by taking a relationship between the coding difficulty level and the amount of allocated coding bits and the amount of actually generated bits of a temporally preceding unit time and the relationship between the coding difficulty level of a temporally preceding unit time and that of the current unit time into consideration.

3. The video signal coding method according to claim 1, wherein said step of determining the actual amount coding bits on the basis of the reference value is conducted by controlling the actual amount of allocated bits so that the sum of the

generated bits obtained when coding the input video signal for a certain period of time T_vbr does not exceed the amount of bits available for recording a signal having the length of the period of time T_vbr on a recording medium.

4. The video signal coding method according to claim 1, wherein part of the sum B_av of the amounts of allocated bits b_av per unit time for a certain period of time T_vbr, or

$$B\_av = b\_av \times T\_vbr,$$

is stored as virtual buffer V_vbr in advance and the actual reference value of the amount of allocated coding bits b_real is obtained by

$$b\_real = (B\_av - V\_vbr) / T\_vbr$$

so that an amount of allocated bits not smaller than b_real is given as long as V_vbr > 0 but an amount smaller than b_real is given otherwise in said step of determining the actual amount of allocated coding bits on the basis of said reference value.

5. The video signal coding method according to claim 4, wherein an upper limit is provided in advance according to the amount of allocated bits b_av when giving an amount of allocated bits exceeding said b_real.

6. The video signal coding method according to claim 4, wherein a lower limit is provided in advance according to the amount of allocated bits b_av when giving an amount of allocated bits smaller than said b_real.

7. The video signal coding method according to claim 4, wherein the upper limit is provided according to a proportion of scenes that are conspicuously degraded

as a result of coding by taking the visual characteristics of the input image into consideration when giving an amount of allocated bits smaller than said b_real.

8. The video signal coding method according to claim 4, wherein, when the difference between the sum of the amounts of actually generated bits B_gen in the period of time and the sum of the amounts of available bits B_av in the period of time (B_av - B_gen) is positive when the coding operation in said period of time T_vbr is over, the difference is carried over and added to the sum of the amounts of available bits in the next period of time.

9. The video signal coding method according to claim 4, wherein, when the sum of the amounts of available bits exceeds R_total times of the initial sum B_av as a result of carrying over the difference, the reference value of the actually allocated bits per unit time b_real is raised according to the ratio.

10. A video signal encoder comprising:

a means for determining the coding difficulty level d of an input video signal for each unit time;

a means for determining a reference value for allocating coding bits on the basis of temporally b (d) for an amount of coding bits b allocated for each unit time and related in advance to the coding difficulty level d of said input video signal for each unit time;

a means for determining an actual amount of allocated coding bits b_x on the basis of the reference value; and

a means for genesrating coded data by coding the input video signal for each unit time on the basis of said actual amount of allocated coding bits b_x.

11. The video signal encoder according to claim 10, wherein said reference value is determined by taking the relationship between the coding difficulty level and the amount of allocated coding bits and the amount of actually generated bits of a temporally preceding unit time and the relationship between the coding difficulty level of a temporally preceding unit time and that of the current unit time into consideration.

12. The video signal encoder according to claim 10, wherein said means for determining the actual amount coding bits on the basis of the reference value controls the actual amount of allocated bits in such a way that the sum of the generated bits obtained when coding the input video signal for a certain period of time T_vbr does not exceed the amount of bits available for recording a signal having the length of the period of time T_vbr on a recording medium.

13. The video signal encoder according to claim 10, wherein

part of the sum B_av of the amounts of allocated bits b_av per unit time for a certain period of time T_vbr, or

$$B\_av = b\_av \times T\_vbr,$$

is stored as virtual buffer V_vbr in advance and the actual reference value of the amount of allocated coding bits b_real is obtained by

$$b\_real = (B\_av - V\_vbr) / T\_vbr$$

so that an amount of allocated bits not smaller than b_real is given as long as V_vbr

> 0 but an amount smaller than b_real is given otherwise in said step of determining the actual amount of allocated coding bits on the basis of said reference value.

14. The video signal encoder according to claim 13, wherein an upper limit is provided in advance according to the amount of allocated bits b_av when giving an amount of allocated bits exceeding said b_real.

15. The video signal encoder according to claim 13, wherein a lower limit is provided in advance according to the amount of allocated bits b_av when giving an amount of allocated bits smaller than said b_real.

16. The video signal encoder according to claim 13, wherein the lower limit is determined as according to a proportion of scenes that are conspicuously degraded as a result of coding by taking the visual characteristics of the input image into consideration when giving an amount of allocated bits smaller than said b_real.

17. The video signal encoder according to claim 13, wherein, when the difference between the sum of the amounts of actually generated bits B_gen in the period of time and the sum of the amounts of available bits B_av in the period of time (B_av - B_gen) is positive when the coding operation in said period of time T_vbr is over, the difference is carried over and added to the sum of the amounts of available bits in the next period of time.

18. The video signal encoder according to claim 13, wherein, when the sum of the amounts of available bits exceeds R_total times of the initial sum B_av as a result of carrying over the difference, the reference value of the actually allocated bits

per unit time b_real is raised according to the ratio.